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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,793	02/20/2002	Clifford N. Click JR.	188254/US/2	2841

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EXAMINER	
PHAM, CHRYSTINE	
ART UNIT	PAPER NUMBER
2192	
MAIL DATE	DELIVERY MODE
10/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/080,793	CLICK ET AL.	
	Examiner	Art Unit	
	Chrystine Pham	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,9,10,12 and 17-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,9,10,12 and 17-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to Paper filed on July 2, 2007. Claims 1, 9, 10, 12, 17-23 are pending.

Response to Arguments

2. Applicant's arguments with respect to Crelier (US 6,851,109 B1) have been considered but are moot in view of the new ground(s) of rejection (Crelier, US 6,151,703 A).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 9, 10, 12, 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crelier (US 6,151,703 A) in view of Kanamori (US 6,167,565 A).

Claim 1

Crelier teaches a method for providing an adapter or stub (see at least *CallbackStaticMethod, CallbackDynamicMethod, CallbackNativeMethod, invokeCompiledMethod* FIG.5 & associated text) as needed for a virtual machine during runtime when said virtual machine executes computer code (see at least *virtual machine* col.3:42-57; *method block, caller, callee, interpreted method, compiled method, callback stub functions, new stub functions, invokeCompiledMethod* col.4:8-15;), said method comprising:

- identifying a machine state input parameter for a machine state (see at least *560* FIG.5 & associated text);
- identifying input parameters for a call to compiled code (see at least *calling slots* col.4:8-55; *method is compiled, subsequent calls, from an interpreted caller, compiled code slot* col.4:15-49; *463* FIG.4 & associated text; *564, invokeCompiledMethod* FIG.5 & associated text);
- mapping the machine state input parameter and the machine state to the input parameters for the call to compiled code (see at least); and
- mapping the machine state and a return value to an exit point of an interpreter to compiled code adapter, thereby providing an adapter/stub representation that can be configured as an adapter for the virtual machine during runtime (see at least *564, invokeCompiledMethod* FIG.5 & associated text).
- determining during runtime whether configure the adapter/stub representation as an adapter or as a stub for the virtual machine (see at least *560* FIG.5 & associated text)

- providing said adapter/stub representation during runtime as an interpreter to compiled code (I/C) adapter (see at least *564, invokeCompiledMethod* FIG.5 & associated text) that *facilitates translation of a first execution stack used by an interpreter* associated with the virtual machine when the determining determines to provide the (I/C) adapter, *so that the first execution stack can subsequently be used to execute compiled-code compiled by a compiler associated with the virtual machine* (see at least *new stub functions, invokeCompiledMethod* col.4:17-23; col.4:32-35; col.4:47-50; col.12:31-41); and
- providing said adapter/stub representation during runtime as a compiled code to interpreter (C/I) adapter (see at least *563, CallbackStaticMethod, CallbackDynamicMethod, CallbackNativeMethod* FIG.5 & associated text) that *facilitates translation of a second execution stack used for execution of compiled code compiled by a compiler* associated with the virtual machine when the determining determines to provide the C/I adapter, *so that the second execution stack can be subsequently be used by an interpreter* associated with the virtual machine (see at least *callback stubs, CallbackStaticMethod, CallbackDynamicMethod, CallbackNativeMethod* col.4:36-49; col.11:41-52; col.12:56-59) .

Crelier does not expressly disclose generating said adapter/stub representation during runtime. However, Kanamori teaches a system and method of dynamically generating stubs (see at least *302, 303* FIG.3 & associated text) that faciliate the conversion (i.e., translating, or marshaling) of parameters such as an execution stack (see at least

compilers, interpreters, parameters, stack col.2:8-15; *marshaling, parameter, translator, function, invoking program* col.3:10-18; col.4:11-24). It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of Kanamori into that of Crelier for the inclusion of generating new adapter/stub during runtime. And the motivation for doing so would have been to provide custom marshaling codethat support the marshaling of input parameters of data types, which do not have predefined marshaling code (i.e., adapter/stub) (see at least Kanamori col.4:12-25).

Claim 9

The rejection of base claim 1 is incorporated. Kanamori further teaches wherein the method is performed in response to a determination that the adapter/stub is not stored in an adapter/stub library associated with the computer system (see at least *302, 304* FIG.3 & associated text).

Claim 10

The rejection of base claim 9 is incorporated. Claim recites limitations, which have been addressed in claims 1 and 9, therefore, is rejected for the same reasons as cited in claims 1 and 9.

Claim 12

The rejection of base claim 1 is incorporated. Knamori further teaches wherein the adapter/stub is further operable to update the states of different components of the computer system (see at least *compilers, interpreters, parameters, stack* col.2:8-15; *marshaling, parameter, translator, function, invoking program* col.3:10-18; col.4:11-24).

Claim 17

The rejection of base claim 1 is incorporated. Crelier further teaches wherein said determining of whether to provide an I/C adapter or a C/I adapter comprises: determining whether one or more bytecodes have been processed by an interpreter (see at least *564, invokeCompiledMethod* FIG.5 & associated text).

Claims 18-20

Claims recite a tangible computer readable medium including computer program code for performing the method addressed in claims 1, and 17, therefore, are rejected for the same reasons cited in claims 1 and 17.

Claims 21-23

Claims recite a computing system comprising at least one processor that performs the method addressed in claims 1, and 17, therefore, are rejected for the same reasons cited in claims 1 and 17.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chrystine Pham whose telephone number is 571-272-3702. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TUAN DAM
SUPERVISORY PATENT EXAMINER